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FIRST RECORD OF *PEGANUM HARMALA* (ZYGOPHYLLACEAE) IN VAL VERDE COUNTY, TEXAS, AND SUBSEQUENT ERADICATION TREATMENT

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ABSTRACT

A single plant of *Peganum harmala* was found and destroyed in Amistad National Recreation Area (AMIS), a unit of the National Park Service, in southern Val Verde County. This is believed to be the first record of *P. harmala* for Val Verde County. An introduced species, *P. harmala* is identified as a noxious weed in six Western states.

KEY WORDS: Zygophyllaceae, *Peganum harmala*, African rue, noxious weed, Amistad National Recreation Area, National Park Service

A single plant of *Peganum harmala* L., commonly called African rue, was identified (Correll & Johnston 1970), vouchered, and then destroyed in AMIS in May 2013. The plant was in flower with many immature fruits. There was no sign of mature, dehisced fruits, and no other plants were located. Voucher specimens will be housed at AMIS, Sul Ross State University (SRSC), and UT Austin (TEX).

Peganum harmala was found at the edge of the pavement of Spur 406, one of the access points to the reservoir for boaters, 7.9 km (4.9 mi) from Hwy 90. Only the one plant was observed (Figure 1) in a visual survey along both sides of the paved road to the water line and in an area approximately 20 m in diameter from the plant. Its bright green stems and linearly lobed leaves (Fig. 3) present a superficial resemblance to *Salsola tragus*, also found along Spur 406. But the white, 4- or 5-petaled flowers (Figs. 4a, 4b) and immature capsules (Figs. 5a, 5b) clearly differentiate this plant from *Salsola*. Other species in association with *P. harmala* were *Cynodon dactylon* and *Phyla nodiflora*, both common and abundant ground cover in the vicinity of Spur 406.

Voucher. **USA. Texas.** Val Verde Co.: Amistad National Recreation Area, National Park Service, N edge of pavement on Spur 406, 4.9 mi from jct with Hwy 90, 31 May 2013, *Weckesser 1457*, AMIS catalog number 60361 (AMIS, SRSC, TEX).

Peganum harmala, first reported in the USA in Deming, New Mexico, in 1935 (Hart et al. 2003), has spread throughout the West, with seemingly disjunct county reports from as far as Washington and Montana (USDA 2013). In Texas, it has been reported in the trans-Pecos region, Edwards Plateau, and the Plains (Turner et al. 2003). The nearest reports to AMIS are from west-central Terrell and northwest Edwards counties, distances of approximately 225 km (140 mi) northwest and 113 km (70 mi) north, respectively (Fig. 2).

The *Peganum harmala* plant on Spur 406 was cut back below the root collar. Two weeks later, it had resprouted two stems. These were removed and the root was again cut back. As of late August, no new growth had been observed from the original root stock. However, in early August new growth from a rhizome was observed and treated with a foliar herbicide, following manufacturer's guidelines. Small quantities of Roundup Pro (EPA #524-475) and Arsenal (EPA #241-

346), with Baron's Non-Ionic Surfactant-Activator (no EPA number) and Sanco brand Lazer Spray Pattern Indicator dye (no EPA number) were mixed in a 32-oz. hand-held spray bottle, with resulting 1% Roundup Pro and 5% Arsenal concentrations. The solution was applied to the stems and leaves until they were wet and shiny but not dripping. No new growth was found after 2- and 3-week follow-up observations. The site will continue to be monitored for new growth, especially after rains.

Peganum harmala is poisonous to livestock, though it is reportedly extremely unpalatable (Hart et al. 2003). Even though most animals will not eat it unless they are starving, its presence in AMIS has potential implications for neighboring ranches.

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Figure 1. *Peganum harmala*, whole plant, at the edge of Spur 406 pavement, Amistad National Recreation Area, Val Verde County, Texas. Photo by W. Weckesser.

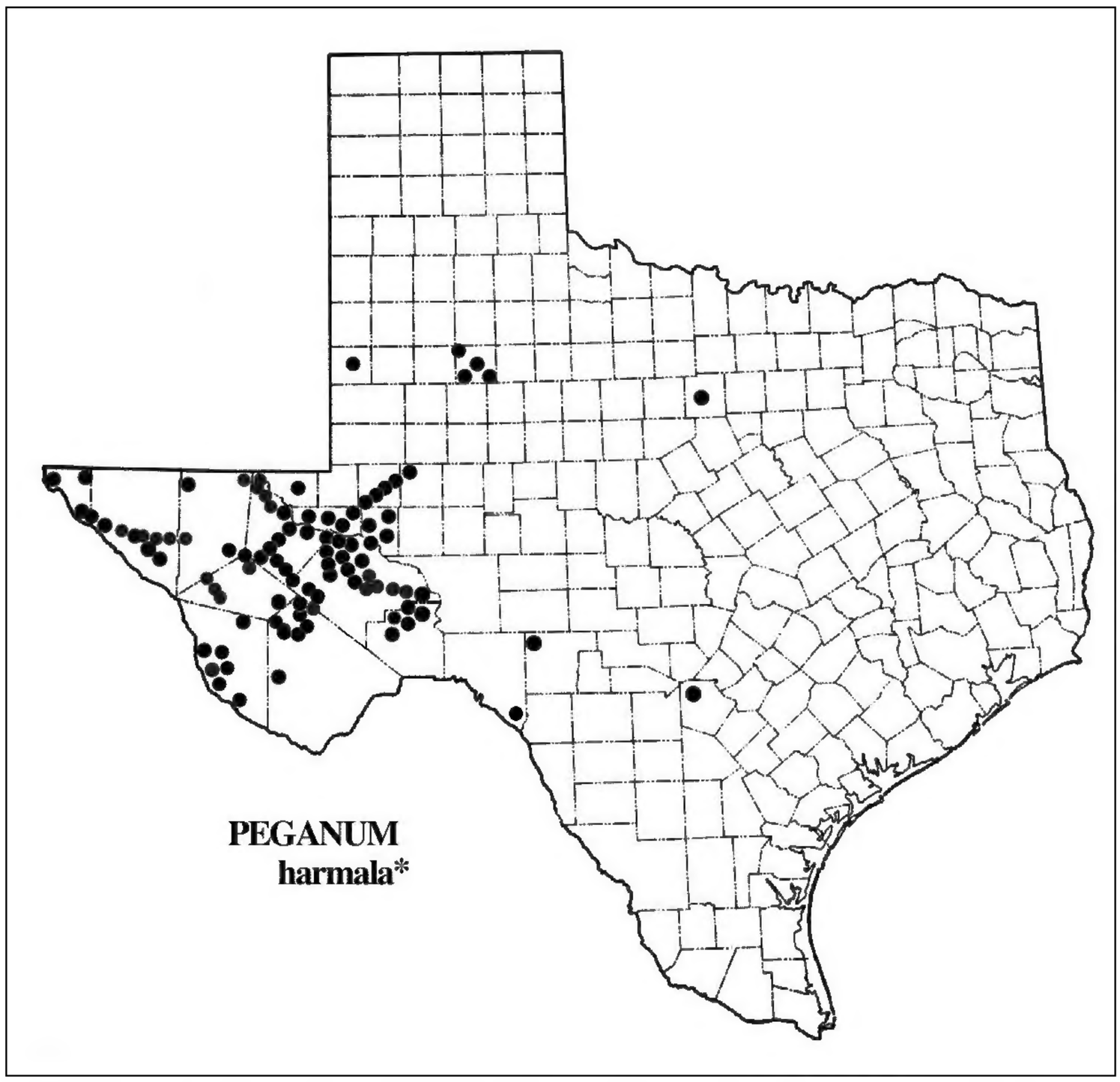

Figure 2. Distribution of *Peganum harmala* in Texas by county. Map courtesy of Dr. Billie L. Turner.

Figure 3. *Peganum harmala* flower, bracts, and leaves, Amistad National Recreation Area, Val Verde County, Texas. Photo by W. Weckesser.

Figure 4a. *Peganum harmala* flower, Amistad National Recreation Area, Val Verde County, Texas. Photo by W. Weckesser.

Figure 4b. *Peganum harmala* flower, Amistad National Recreation Area, Val Verde County, Texas. Photo by W. Weckesser.

Figure 5a. Immature fruit of *Peganum harmala*, Amistad National Recreation Area, Val Verde County, Texas. Photo by W. Weckesser.

Figure 5b. Immature fruit of *Peganum harmala*, Amistad National Recreation Area, Val Verde County, Texas. Photo by W. Weckesser